

Transit Bus Fleet Rule Implementation Update

November 7, 2002



California Environmental Protection Agency



Air Resources Board

Today's Presentation

- Changes to the Regulation
- Requirements for 2003
 - ▶ Reports Due 1/31/03
 - ▶ Retrofit
 - ▶ Zero Emission Bus
 - ▶ Alternative NOx Strategy Demo

Regulation Changes

- Compliance Path Change for TA in SCAQMD
- Definitions
 - ▶ Alternative Fuel
 - ▶ Active Fleet
 - ▶ Emergency Contingency
 - ▶ Spare Bus

Regulation Changes, con't

- Alternative Fuel Bus Purchases by Diesel Path T.A.
- Reducing Total Diesel PM Emissions
 - ▶ PM Reductions
 - ▶ Technology Delay
 - ▶ Verified Fuel Use
 - ▶ Small T.A. Delay
 - ▶ DECS Allowances

Regulation Changes, con't

- Reducing Total Diesel PM Emissions
 - ▶ Use of ARB Verified DECS or ARB Certified Rebuild Kit
- Financial Hardship Delay for Small T.A.
- Reporting Requirements
- Deleting Certification Procedures for PM Retrofit Devices
- Adding Interim Certification for HEB

Reports Due in 2003

For 2002

Reporting Requirements

- Reports Due by January 31, 2003 for 2002
- Annual Report, as of 1/1/02:
 - ▶ Number, Engine Mftr & Make, Engine Model Year For All Engines in Buses, and Fuel Used
 - ▶ Alt.-Fuel Path List Bus Purchases & Leases, and Percentage of Alt. Fuel Buses Purchased or Leased

Reporting Requirements (Cont'd)

- T.A. Changing Fuel Path from Diesel to Alt.-Fuel Must Report Change by January 31, 2004 (SCAQMD Only)

Reporting Requirements (Cont'd)

- NOx Fleet Average, 4.8 g/bhp-hr
 - ▶ Final Report Due 1/31/03
 - ▶ Detail Fleet Average AS OF 10/1/02
 - ▶ Describe Actions Taken to Achieve Standard (retirements, repowers, purchases)

Reporting Requirements (Cont'd)

- Total Diesel PM Emission Reduction
 - ▶ Initial Report Due 1/31/2003
 - ▶ No., Mft., Make, & Model Year of all Diesel-fueled, Dual-fuel, Bi-fuel, and Diesel HEB
 - ▶ PM Engine Cert. Values & Total PM
 - ▶ Total Diesel PM Baseline as of 1/1/02

Reporting Requirements (Cont'd)

- Total Diesel PM Emission Reduction
 - ▶ For Each Bus that has a DECS: DECS Product Serial No., the Diesel Emission Control Strategy Family Name, and Date of Installation
- Subsequent Annual Reports Include Percentage Reduction Achieved

Actions Required in 2003

By Transit Agencies

Low-Sulfur Diesel Fuel

- Continue Using Low Sulfur Diesel Fuel
 - ▶ <15 parts per million (ppm) Sulfur
 - ▶ July 1, 2002
- May Use a Fuel that is Verified as a DECS Instead to Meet PM Reductions
 - ▶ None Verified Yet

NOx Fleet Average

- Maintain NOx Fleet Average
 - ▶ Applies to all transit agencies
 - ▶ 4.8 g/bhp-hr NOx
 - ▶ October 1, 2002

Total Diesel PM Reduction

- By January 1, 2004, Reduce Total PM:
 - ▶ Diesel Path by 40%
 - ▶ Alternative Fuel Path by 20%
 - ▶ Relative to January 1, 2002, Baseline

Total Diesel PM Reduction Schedule

Fuel Path	2004	2005	2007	2009
Diesel Path	40%	60%	85%	85%
Alt-Fuel Path	20%	40%	60%	85%

Note: Percentages of retrofit requirements must be met by January 1 of each year.

Diesel PM Reduction (Cont'd.)

- Compliance Extension
 - ▶ Agencies with <20 Buses in 1-Hr. Ozone Attainment Districts May Delay 100% Implementation to 1/1/2007 (Diesel Path) or 1/1/2009 (A-F Path)

PM Retrofit (Cont'd.)

- Delays

Alternative NOx Strategy Exemption

Applies to 7 Transits

Alternative NOx Strategy

- “The Executive Officer may exempt transit agencies on the diesel path from the requirements” of 1956.2 (d)(4) provided that:
 - ▶ (1) The Transit Agency applies to the EO by June 30, 2001.

Alternative NOx Strategy

- ▶ (2) Final Date For Plan Approval Is 12/31/2001 (extension granted by Board)
- ▶ (3) Advanced NOx Aftertreatment Demonstration
 - **Commit Resources by 12/31/2001**
 - **Demonstration in Progress by 12/31/2002**

Alternative NOx Strategy

- T.A. May Not Purchase Buses with Diesel* Engines Exceeding 0.5 g/bhp-hr NOx 2004-2006 MY
- Engine Manufacturer May Not Sell Diesel* Engines Exceeding 0.5 g NOx 2004-2006 MY to T.A.
- UNLESS Approved for Alt NOx Strategy Exemption - Only Seven Are

Hybrid Electric Buses

Interim Test and Certification Procedures

Hybrid Electric Buses

- ◆ Hybrid design incorporates a Renewable Energy Storage System (RESS)
- ◆ RESS allows for a smaller engine = improved fuel economy
- ◆ Stop-&-Go duty cycle ideal for regenerative braking typical of hybrid systems
- ◆ Lower fuel consumption and emissions

Board Directives to Staff

October 24, 2002

Directions from Board

October 2002

ARB Website :

www.arb.ca.gov/msprog/bus/bus.htm

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